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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California	Rulemaking 20-09-001 (Filed 10/01/21)

COMMENTS OF THE ELECTRONIC FRONTIER FOUNDATION IN RESPONSE TO THE REQUEST FOR ADDITIONAL COMMENTS AS PART OF MIDDLE-MILE DATA COLLECTION

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COMMENTS OF THE ELECTRONIC FRONTIER FOUNDATION

I. INTRODUCTION

In accordance with Rule 6.2 of the California Public Utilities Commission's ("Commission") Rules of Practice and Procedure ("Rules"), the Electronic Frontier Foundation (EFF) submit these comments in response to the request for additional comments as part of middle-mile data collection.

II. ABOUT THE PARTIES

The Electronic Frontier Foundation (EFF) is the leading nonprofit organization defending civil liberties in the digital world. Founded in 1990, EFF champions user privacy, free expression, and innovation through impact litigation, policy analysis, grassroots activism, and technology development. With over 35,000 dues-paying members (with several thousand California members) and well over 1 million followers on social networks, we focus on promoting policies that benefit both creators and users of technology. EFF has been at the forefront of studying the future of broadband access in the high-speed market and has conducted in-depth research and produced both legal and technical publications on the issue. EFF's goal in broadband access is the deployment of universally available, affordable, and competitive high-speed networks. EFF focuses on fiber because it is the only data transmission medium capable of low latency and speed upgrades for generations to come that far exceed alternative last-mile options and a necessary component for ubiquitous 5G coverage.

III. DISCUSSION

A. Open-Access: As described in more detail in the Order Instituting Rulemaking that initiated this proceeding, the Commission has regulatory authority over telecommunications service providers.

1. How can the Commission use its regulatory authority to assure durable and enforceable open-access and affordability requirements in perpetuity?

There is a high likelihood that certain Internet Service Providers (ISPs) that own middle-mile infrastructure will assert that they already have middle-mile infrastructure in areas the state may consider constructing its own network. However, the real question is whether that infrastructure has sufficient capacity and is affordable on an open access basis. As EFF noted in its previous filing, the Commission should collect data for a region and assess what rates are being charged to determine the lowest best possible price available. However, this does not eliminate a key concern stakeholders have with incumbents, which is whether those prices will remain affordable in the future. Lacking confidence in the durability and consistency in pricing, new last-mile entrants designed around deploying future-proof long-term investments in infrastructure may run into difficulties getting off the ground.

The Commission could bring clarity and confidence to the market and help resolve these multiple challenges with its authority. In specific, EFF suggests the Commission establish a class of entities that qualify as eligible open-access networks similar to eligible telecommunications carriers (ETCs). This would allow an existing provider who ***asserts*** they offer open-access affordable middle-mile infrastructure to voluntarily make good on that assertion by agreeing to be subject to the CPUC's authority for a period of time (possibly as long as 30 years). The Commission can establish criteria for qualifications as to what constitutes a truly open-access and affordable provider of middle-mile infrastructure following examples from federal law and Federal Communications Commission (FCC) history that EFF will detail below. This will serve as a mechanism for an incumbent to certify that the state does not need to build infrastructure, while providing regulatory confidence and clarity to locals in need of access.

2. **Should the Commission adopt a tariffing requirement for open-access networks?**

Yes. This would be logical to help the Commission ensure that the charges and rates offered by an open-access network meet the goals of the statute. This can also serve as means for the carrier to agree to be subject to Commission oversight in order to gain an official status as an open-access network.

3. **In October 2020, the Federal Communications Commission (FCC) eliminated a number of network unbundling and resale requirements placed on Incumbent Local Exchange Carriers, including requirements for DS1 and DS3 loops, and dark fiber transport provisioned from wire centers within a half-mile of competitive fiber networks. (See In the Matter of Modernizing Unbundling and Resale Requirements in an Era of Next-Generation Networks and Services, WC Docket No. 19-308, FCC 20-152) How will this impact Competitive Local Exchange Carriers in California that currently utilize these services to provide telecommunications services, including last-mile broadband Internet access service?**

EFF opposed the FCC's decision to unwind critical provisions of the federal competition law because it would suppress the overall amount of fiber provided in the last mile. The incumbent local exchange carriers (ILEC) who sought forbearance from the '96 Act's competition provisions have stopped transitioning their networks over to fiber to the home (FTTH) in many areas, while the competitive local exchange carriers (CLEC) that would be harmed by forbearance are actively deploying FTTH. The ILECs are no longer widely building networks capable of competing and surpassing the cable industry while the CLECs are actively challenging cable markets. And every market where policymakers wish to see 5G high-speed broadband access competition relies on dense fiber networks on the ground that come from FTTH deployments. These facts made forbearance from the competition policies enacted in 1996, which should only be granted to promote competitive markets, untenable.

So long as the federal deregulation stays in place, serious harm will remain in the near future for last-mile fiber-based competition brought by CLECs. While it is possible that a future

FCC can reverse, California shouldn't subject its own market to the whims of a far-off federal regulator. The state can solve its own problem with its own authority and infrastructure program so that our local markets are immunized from poorly thought-out federal deregulation. As noted earlier, the Commission can establish a class of carriers that qualify as open-access providers that meet the state's objectives for affordability and capacity. The Commission can utilize the FCC rules that governed middle-mile infrastructure prior to the October 2020 decision to deregulate as a model. In specific, the Commission should consider utilizing the FCC's rules that required the unbundling of incumbent unlit fiber to ensure access to dark fiber to a last-mile entrant at an at-cost basis. This provisioning of dark fiber from ILECs has a long-proven history that has ensured the best lowest possible price for access to existing fiber infrastructure, which would clearly meet the goals of affordable sufficient capacity.

While the FCC rules can serve as an informative model for determining eligibility of a new class of open-access middle-mile provider, the Commission should expand who has a right to non-discriminatory access to existing infrastructure. In order to synch the designation with the state's infrastructure program goals, a state-designated class of open-access providers must make dark fiber available to loan-loss reserve applicants as well as CLECs on the same terms. The legislature had already provided a list of eligible last-mile entities by designating who can qualify as an applicant for loan-loss reserve funds. This will also greatly assist the Department of Technology's effort to determine where to build and not to build middle-mile infrastructure. If a region has a CPUC-designated open-access provider, that will clearly signal to the Department of Technology that state spending in that region is unnecessary.

IV. Additional Factors to Consider: What additional criteria should the Staff Report take into consideration and to what extent, including, but not limited to:

- **Affordability;**
- **Redlining;**
- **Route redundancy;**
- **Competition;**

- **Hardening, undergrounding, deployment in high fire threat areas;**
- **Cell coverage; and**
- **Labor and economic development benefits.**

EFF suggests the Commission begin to consider ways to provide training courses to deploy last-mile networks to communities motivated to self-provision broadband access. Under SB 4, which currently sits before Governor Newsom, the legislature wishes for the Commission to advise local communities by providing technical assistance. History can provide useful lessons in how the state can play a pivotal role in expanding access by establishing training courses accessible to local communities eager to build their own solutions.

This can be modeled around how the government helped local people deliver their own electricity from the days of electrification and can work to stimulate demand for the state's middle-mile infrastructure. Between grants and loan-loss reserve funds, local communities have completely at their disposal the financial means to build a permanent last-mile solution to end the digital divide. However, they may lack the initial technical knowledge necessary to leverage state investments in middle-mile infrastructure.

Lastly, the Commission should outline a means of ensuring that communities in the early stages of thinking about developing their own last-mile solution are given adequate time to become grant and loan-loss reserve applicants as well as utilizers of the state's or regulated entities' middle-mile infrastructure. EFF theorizes that certain communities are ready today to utilize the state's infrastructure program, while others may need a couple of years to be fully ready to apply for funds. Planning multiple phases that give early bidders and late comers equal opportunities will be important to ensure that the state's middle-mile program is successful and that grants and loans are given to the most efficient recipients.

V. Middle-Mile Network Services for ISPs: The statute mandates that the State of California take into consideration various aspects that will increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial internet service providers.

A. What specific locations, routes, interconnection points, regeneration points, and tie-ins should the Commission consider in order to increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial internet service providers?

As mentioned above, EFF predicts that a whole range of communities are ready to access state-provisioned or regulated middle-mile infrastructure as soon as possible. Getting an inventory of where demand is ready today should determine where the state makes its first set of investments. The state should consider a means of soliciting interests and the current stage of preparation that exists in communities to establish these locations. A means of locking in interest can be established by having new and existing last-mile providers agree in advance to utilize the state's middle-mile network if built so that the state network has a guaranteed revenue stream to sustain its first investments.

B. What network design and other design, technical, business, and operational considerations will increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial Internet service providers?

The state's middle-mile network's most attractive element will likely be the fact that the state itself does not intend to provide its own last-mile broadband service in competition with potential utilizers of the state's network. Ensuring a type of structural separation going forward will be critical to providing confidence. Also providing transparency over costs and how that translates into prices offered for accessing the state's infrastructure will provide useful understanding for last-mile providers and the public.

C. What services should the network provide commercial providers (e.g., dark fiber, lit fiber, colocation, wireless backhaul, etc.)?

Communities will need a variety of options depending on their stage of readiness as well as eagerness to provide their own services. It is entirely feasible that a local private provider simply needs dark fiber to run their own network in its entirety. It is also feasible that a loan-loss reserve applicant needs a lit fiber service. Likely the best way to determine which type of infrastructure should be provisioned would be to provide a means to request a certain type of

provisioning from the state to inform its middle-mile program over a phased period of years. For example, the Department of Technology could issue a solicitation seeking to determine interests in dark fiber, colocation, and lit fiber in advance of any construction decisions and conduct a follow-up solicitation in a few years.

EFF believes loan-loss reserve applicants engaging in public-private partnerships or their own self provisioning can be useful in informing the state because of their need to control their debt obligations, which will be dependent on long-term consistent and low-cost access to middle-mile infrastructure. The Commission could consider integrating the grants and loan-loss reserve program with the Department of Technology's middle-mile program as a means of providing useful information to both agencies and to applicants.

VI. Middle-Mile Network Services for Consumers

A. The middle-mile network must prioritize connections to anchor institutions that lack sufficient high-bandwidth connections. Should the statewide middle-mile network provide direct service to anchor institutions?
Should the middle-mile network directly provide broadband Internet access service, voice service, etc.?

An open-access public provider essentially has the government deliver the infrastructure capacity necessary to enable competitive broadband markets and other services that need data networks. It has been a successful tool of local governments to deliver gigabit access in Utah[1] and Idaho[2] and in local California areas such as the South Bay.[3] However, a regional open-access approach requires 10,000s of users that can sustain a market exchange, and likely several local governments to collaborate on its approach. It will also need buy-in from local private businesses to resell services.

[1] Utopia Fiber, Residential Pricing, available at https://www.utopiafiber.com/residential-pricing.
[2] City of Ammon Fiber Optics, available at https://www.ammonfiber.com.
[3] South Bay Fiber Network, available at https://www.southbaycities.org/programs/south-bay-fiber-network.

A direct seller of broadband service as a public provider is the government delivering access much like a utility and is often necessary in the most difficult-to-serve markets where no means of creating a functional private market to serve all people exists. In those instances, the government can set the price of service and even offer zero-profit services as a public good.

If an open-access public provider also decides to sell broadband services, it will be difficult to attract a market of private players if they believe the government will directly compete with them over its own infrastructure at prices they cannot match. At the same time, an open-access provider/direct seller hybrid will also need to recover its costs of directly selling broadband service and therefore will be in conflict with other providers seeking subscribers. Clear structural separation between the infrastructure and the service will ensure avoidance of this conflict of interest. Should a local government entity, such as the school district or library, wish to provide low-cost alternatives, it should lease access from the state infrastructure in the same way as any other private service provider.

VII. Last-Mile Providers: The middle-mile network must enable last-mile connections.

A. How can the middle-mile network enable last-mile connections in unserved, underserved and served areas of the state?

The state's most powerful legal tool now is the ability to guarantee a community that if they want to build their own last-mile solution, the state can connect them to the global internet with its middle-mile program. The middle-mile program's attractiveness can be leveraged to stimulate demand of the state's grant and loan-loss reserve program, which will in turn create new renters of the state's middle-mile program. In other words, the state's middle-mile program can be a great recruitment tool for new entrants at the last mile.

B. How can the middle mile network assist the operation and development of public broadband networks?

Provisioning of dark fiber under an at-cost basis to yield the lowest cost possible is likely the most powerful way the state can support the development of public broadband networks. In particular if a low-income support program can pay for broadband access at a certain price point, EFF believes that it is entirely feasible to have free offerings of broadband access to low-income

people. The exact subsidy support needed to deliver on this public good is still being studied by EFF, but we think it is possible for urban markets to leverage open-access fiber to deliver such benefits.

VIII. Other Issues Not Covered

A. Are there any issues the State of California should take into consideration as it develops the statewide middle-mile network?

In a previous filing regarding digital redlining EFF noted that it appears profitable to provide ubiquitous fiber in areas with population density exceeding 1,000 people per square mile. Based on that conclusion, it appears evident that California's most populous cities can support more than one fiber-based competitor. In fact, we are confident that with accessible middle-mile fiber provided at the best lowest cost in a major city, a private or public provider could effectively provide fiber infrastructure at an open-access last-mile basis to all residents currently lacking a FTTH option. This would effectively be the third pipe in what is primarily a duopoly market for some in high-speed access. Projects promising universal coverage with fiber optics to all residents at the last mile for the unserved, underserved, and the served alike should be given special consideration with the state's middle-mile program given the high level of utilization potential of the state's infrastructure.

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Respectfully submitted,

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